



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,213	10/22/2001	Ryan Xue	41575/29337	4971

29493 7590 01/27/2003

HUSCH & EPPENBERGER, LLC  
190 CARONDELET PLAZA  
SUITE 600  
ST. LOUIS, MO 63105-3441

EXAMINER

BURNHAM, SARAH C

ART UNIT PAPER NUMBER

3636

DATE MAILED: 01/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/986,213

Applicant(s)

XUE ET AL.

Examiner

Sarah C. Burnham

Art Unit

3636

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) 12,13,19-24,36,37 and 44-55 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11,14-18,25-35 and 38-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6 6) ☐ Other:

Art Unit: 3636

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 12-13, 19-24, 36-37 and 44-55 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 8.
2. Applicant's election with traverse of Group 1 and Sub-group A in Paper No. 8 is acknowledged. The traversal is on the ground(s) that "'a flexible supporting element' clearly applies generically to both a push paddle lumbar support and a flexible wire mat lumbar support". This is not found persuasive because a push paddle lumbar support is not necessarily flexible, in which case a flexible supporting element would not apply generically.

The requirement is still deemed proper and is therefore made FINAL.

### ***Information Disclosure Statement***

3. The information referred to in the information disclosure statements filed on 24 September 2002 has been considered as to the merits.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 3636

5. Claims 17-18 and 41-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The following words/phrases lack proper antecedent basis:

- said current regulating means (claim 17, line 11; claim 17, lines 12-13)
- said driving apparatus (claim 17, lines 11-12; claim 17, line 13; claim 17, line 14)
- said automatic moving (claim 41, line 16)

Claims 18 and 42 are rejected as being dependent upon a rejected base claim.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-2, 5, 7-9, 11, 15-18, 25-26, 29, 31-33, 35, 39-40 and 43 are rejected as best understood with the above cited indefiniteness under 35 U.S.C. 102(b) as being anticipated by Benson (5,816,653). Benson discloses a flexible supporting element (12) "for use in the lumbar region of a seat" (column 3, line 31), including a drive means (or driver) (20) "adapted to change the curvature of supporting element (12) according to a predetermined adjustment cycle" (column 4, lines 1-2). The flexible supporting element (12) takes on an arched cross section and is designed to receive the pressure from a

Art Unit: 3636

person's back leaning on the surface. The adjustment cycle includes a first movement in a first direction (30) and a second movement in a second direction "opposite arrow (30)" (column 3, line 63). A second position can be defined as a position in which apex (27) is at its most extended curvature, a third position can be defined as a position in which apex (27) is at its most flat curvature and a first position can be defined as any of an infinite number of points lying between the second and third positions. Each position is maintained for a given time period creating a pause between movements (abstract). The full range of apex (27) travel is in the range of about thirty-six (36) to about forty (40) millimeters" (column 6, lines 11-12). It can therefore be deduced that a second and third position are at least 8 mm apart and a first and second position are at least 4 mm apart.

Drive means (20) includes a power source (32), an electric motor (22), an output (24)(25), a control module (36), a current controller (40), a position indicator or sensor (74), a memory (76) and a stall sensor (70). A polarity switching means (42)(68) includes a polarity switch (42) and a switch controller (68). Polarity switching means (42)(68) is "adapted to selectively reverse the polarity of the electric connection between module (36) and motor (22) so as to cycle the movement of motor (22) in first and second directions" (column 5, lines 10-13). "Switch controller (68) selectively moves polarity switch (42) from and to a first position defining a first polarity connection between module (36) and motor (22) to and from a second position defining a second polarity connection" (column 5, lines 15-19).

Art Unit: 3636

Benson discloses that each movement lasts 5-25 seconds and each pause lasts 1 to 1.5 second (column 1, lines 40-45). The full range of travel is divided into 4 to 6 separate movements (column 6, line 15). Therefore the time required for the full range of travel (or to move from the second position to the third position) is in the range of 24 (i.e.  $((5+1)*4)$ ) to 159 (i.e.  $((25+1.5)*6)$ ) seconds. This range disclosed by Benson overlaps the range claimed by the Applicant and can therefore be considered anticipatory.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 6, 10, 30 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benson (5,816,653). As disclosed above, Benson reveals all claimed elements with the exception of a pause equal to 3 seconds and a distance between a second and third position equal to 12 millimeters.

It would have been an obvious matter of design choice to specify a pause length equal to 3 seconds and a distance between a second a third position equal to 12 millimeters. By specifying pause length and distance between second and third positions, the lumbar support is customized to meet a specific user's preferences.

10. Claims 4 and 28 are rejected as best understood with the above cited indefiniteness under 35 U.S.C. 103(a) as being unpatentable over Benson (5,816,653) in view of Ogasawara (5,243,267). As disclosed above, Benson reveals all claimed elements with the exception of movements that are without pause.

Ogasawara (5,243,267) teaches the use of an elastic spring element to create "a continuous or smooth series of motions in the fore-and-aft direction" (column 9, lines 40-41) against a lumbar support element (28).

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to add the spring element used to create a smooth and continuous motion to the lumbar support system disclosed by Benson. Such an addition would create a lumbar support device that operates in a manner less noticeable or less disturbing to the seat occupant.

11. Claims 3 and 27 are rejected as best understood with the above cited indefiniteness under 35 U.S.C. 103(a) as being unpatentable over Benson (5,816,653) in view of Hazard et al. (5,637,076). As disclosed above, Benson reveals all claimed elements with the exception of a plurality of cycles that stop automatically after a pre-configured time interval.

Hazard et al. teaches how an "automatic shut-off may be provided if a person is not sitting against the bladder 28 [i.e. flexible support element] for a selectable period of time such as for 12 seconds" (column 5, lines 22-25).

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to add the automatic shut-off capabilities taught by Hazard et al. to the lumbar support system revealed by Benson. Such an addition conserves electricity by ensuring that the device is turned off when not in use.

12. Claims 14, 38 and 41-42 are rejected as best understood with the above cited indefiniteness under 35 U.S.C. 103(a) as being unpatentable over Benson (5,816,653) in view of Schuster, Sr. et al. (6,254,187). As disclosed above, Benson reveals all claimed elements with the exception of a traction cable/traction actuator.

Schuster, Sr. et al. teaches the use of a traction element (2) connected to a flexible supporting element (8) and a drive means (22)(23). Traction element (2) is a "Bowden wire" (column 5, line 7).

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use traction element (2) in place of output element (25). Such a substitution is commonly known in the art as disclosed by applicant in saying that "traction driven lumbar supports commonly have the traction applied to them through a Bowden cable" (paper number 8).

### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.



Art Unit: 3636

The following patents are cited to further show the state of the art with respect to adjustable seat components controlled by electronic motors:


- Specht (6,364,41)
- Ogasawara (5,523,664)
- Ogasawara (5,065,079)

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah C. Burnham whose telephone number is 703-305-7315. The examiner can normally be reached on M-Th 7:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Cuomo can be reached on 703-308-0827. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1020.

SCB  
January 22, 2003

  
Peter M. Cuomo  
Supervisory Patent Examiner  
Technology Center 3600